

*Initials*

WHAT IS CLAIMED IS:

1. An open loop controller for a sampled grating distributed bragg reflector  
2 (SGDBR) laser, comprising:
  - 3 a table of voltages and current settings, each entry in the table corresponding to a  
4 separate operating point of the SGDBR laser, each entry in the table comprising:
    - 5 a first mirror current;
    - 6 a second mirror current;
    - 7 a phase current; and
    - 8 a gain current,  
9 the first mirror current, second mirror current, phase current, and gain current controlling at  
10 least one of a group comprising an optical output power and an output wavelength of the SGDBR  
11 laser; wherein when the controller is given a selected optical power and output wavelength, the  
12 controller selects an entry from the table to control the laser at substantially the selected optical  
13 power and output wavelength.
  1. 2. The controller of claim 1, further comprising a temperature regulator.
  1. 3. The controller of claim 2, wherein the temperature regulator regulates the  
2 SGDBR laser to a fixed, pre-selected temperature.
  1. 4. The controller of claim 1, wherein the table is filled with unique values for  
2 each SGDBR laser.
  1. 5. The controller of claim 4, wherein the unique values are determined using a  
2 calibration routine.
  1. 6. The controller of claim 1 wherein each entry in the table further comprises  
2 an amplifier current.